14085 Howard Road
Dayton, MD 21036

TRP

June 19, 2001

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
The Portals, TW-A325
445 12th Street, SW
Washington, DC 20554

Re: ***Ex parte*** **Notification - ET Docket No. 98-153**
Ultra-Wideband (UWB)

Dear Ms. Salas:

The document attached as an Appendix to this letter was forwarded to Mr. John Reed of the Commission Office of Engineering and Technology on June 15, 2001as requested.

Should any question arise concerning this matter, please do not hesitate to contact me.

Sincerely,

Phillip Inglis
Consultant for Time Domain Corporation

cc: Mr. Reed

Appendix

FSS Earth Station Separation Distance:

Use the following formula from NTIA Report 94-113 to calculate the required path loss:

Lp = C/I – C + Pt + Gt + Gr – Lr – Lt – FDR , Parameters are defined in 94-113.
Pt + Gt –FDR – Lt combine as a measure of FSS earth station received interference power from an interfering UWB transmitter and equals –11 dBm for the worst case condition using a 1 MHz PRF with a UWB EIRP average value of –41.3 dBm.

C/I is 12 dB specified and used in 94-113
C is –100 dBm specified and used in 94-113
Gr is 32 dB specified and used in 94-113
Lr = 2 dB as specified and used in 94-113
Lt = 2 dB as specified and used in 94-113
FSS IF BW = 30 MHz as specified and used in 94-113
Substituting:
Lp = 12 – (-100) + 32 – 2 –11 = 131 dB

Use the free space attenuation formula to calculate distance at a frequency of 3700MHz nominal value.
Lp = 131 dB = 32 + 20log(f) + 20log(d) = 32 + 71 + 20log(d)
D = 25.1 meters

Earth station antenna gain used in the above is 32 dB as contrasted with 42 dB used in the NTIA analysis presented in Special Report 01-43. However, Part 25 of the FCC rules specifies a maximum FSS antenna gain of 32 dB unless a waiver is requested in which case the waiver warns that interference may be received.

SARSAT Separation Distance

Using the above analysis and substituting the appropriate parameters in the equation
C/I = 12 dB used as a nominal value for communications systems
C = -116 dBm based on a received signal level 1 dB above the system noise floor specified in Report 01-43

Gr = 27 as specified in Report 01-43
Lr = 2 dB from 94-113
Power in SARSAT receiver BW – 42 dBm

Lp = 12 – (-116) –42 + 27 –2 =111
20log(d) = 111 –32.4 – 64 = 15
D = 5.4 meters